

An Exchange of Design Principles

An Honors Thesis (Arch 402)

by

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A handwritten signature in dark ink, appearing to read 'J Underwood', is written over the printed name of the thesis advisor.

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Abstract

Across the globe, different cultures have adopted methods of construction and architectural design that have become established design principles. These principles often transcend cultures and provide architects with lessons on successful methods of how to design a building or structure. The purpose of this project is to demonstrate a synthesis of design principles from a variety of cultures that create architecture that is sustainable, facilitates community activities, and promotes economic development. I will compile my field research from my recent study abroad experience and use my analysis of architectural sites visited to identify successful design strategies that can be applied to the design of the new Chesterton Market.

Acknowledgements

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An Exchange of Design Principles

A New Market and Community Center for the Town of Chesterton

The World Tour is a distinct study abroad opportunity for CAP students to experience global culture and architecture, which covers 29 countries in three and a half months. Each student begins by selecting several architectural and socio-economic issues to examine in their hometown and then must design an architectural solution. My project focused on designing a building infrastructure for a growing farmers market and an area for community organizations to meet. The location for this project is situated within the historic downtown of Chesterton, Indiana. With the problem identified, I decided throughout the semester of study abroad to locate specific sites of markets and civil meeting spaces that I would study in depth. In addition, I would seek out other pieces of architecture and design that bring communities together in order to exchange goods, services and ideas. These sites included a variety of markets, outdoor public plazas, and civic structures. The markets ranged from the temporary shopping stalls in Siem Reap, Cambodia to the permanent Grand Bazaar in Istanbul Turkey. In addition to analyzing markets, I focused on a few key public buildings and spaces that are responsible for bringing its respective community together. These public buildings range from the open-air pavilion of the Metropol Parasol in Seville, Spain to the enclosed structure of the Pompidou Center in Paris, France.

Setting off into such a variety of different cultural landscapes required plenty of research through a pre-trip colloquium course in which I chose specific architectural precedents that I would research in depth and visit during the trip. To contain the extensive list of projects visited and documented I will only discuss a short list of the most influential sites visited, how they impacted the design process, and the resulting project. I will discuss four key projects that I

studied in depth and visited during the semester. These projects are spread across the duration of the trip and each piece of architecture belongs to a distinctly different culture. I will explain the significant design lessons and strategies that I learned from these projects and how that impacted the final design of a new infrastructure for the Chesterton Market.

Plaza Metropol Parasol

The first site study was the Metropol Parasol located in Seville, Spain. This large pavilion covers a public plaza sheltering those below from the hot sun of Southern Spain. The pavilion functions as a center for a farmers market and is also used for concert venues (Moore). The project has many layers of mixed



Figure #1 Metropol Parasol, Seville, Spain

use with permanent businesses in the ground level and temporary shops that are set up in the open areas of the plaza. Visitors can access the top of the canopy via elevator where a café and several viewing platforms await with panoramic views of the old city. The pavilions success is derived from its integration of permanent businesses, temporary businesses, and entertainment venues that all bring people to this public space.

The Metropol Parasol has an iconic aesthetic that has created a unique identity for the plaza and for the city of Seville. Structures that have a distinct identity create successful landmarks that act as a draw to public places. This pavilion provides a profound example of how to integrate businesses and community activities in to an iconic landmark. The Metropol Parasol is a new and iconic structure but still respects its surrounding context with the pavilions height cresting slightly above the building tops. Instead of dwarfing the surrounding buildings, the

pavilion is just high enough so visitors can see the city over the roofs' of neighboring buildings. The pavilion is located in the center of the old city and maintains an appropriate scale that fits the height of its surrounding context.

This project illustrates several successful design strategies that I incorporated into designing the Chesterton Market. Firstly, the adding of permanent retail space provides economic stability that can pay maintenance fees while also acting to draw in additional visitors who will then encounter temporary businesses. These temporary businesses can begin as stalls in the Chesterton Farmer's Market and as the business grows in popularity, they could move into a permanent location within the market structure. The resulting infrastructure facilitates and fosters the development of upstart businesses. Much of the Market will remain open air like the Metropol Parasol with only a canopy overhead to shade the sun and block the rain. In addition, the Chesterton Market will incorporate missed use programming from a town visitor center to a café. This will ensure the continued success of the Market by increasing the variety of reasons why people should visit and shop. The site for Chesterton's new market structure is located in the center of the historic downtown area and just, as the Metropol Parasol must maintain an appropriate scale and simple aesthetic that does not overpower the surrounding downtown.

Grand Bazaar Istanbul

The second site study I focused on was the Grand Bazaar in Istanbul, Turkey. This historic market has existed for centuries and remains a vibrant network of shops to this day. The market is an iconic landmark for the city of Istanbul and has become a popular tourist



Figure #2 The Grand Bazaar. Istanbul, Turkey

destination as well. Although the market structure is several hundred years old the market as reinvented itself to serve the current demand of tourists (Tuzel). This complex could be seen as a precursor to the modern mall but the bazaar has a level of intimacy with its small and crowded shops that cannot be found in the modern mall. There are no chain stores in the entire market and some merchants do not have permanent shops but instead display their products on tables in open areas. The bazaar is organized into a series of alcoves with most merchants only occupying one but as a business grows, they can take over adjacent alcoves. The market is broken up into this simple unit of alcoves providing flexibility for the ever-changing needs of the shop owners. The small size and intimacy of the shops requires that you interact with the shop owner. This in return provides a more personal experience for the customer and ensures that a happier customer who receives better service. The simple elegance of the market's rhythm of arches creates a simple organization denoting the entrance into shops. Since the bazaar is more compact compared to a modern mall, a group of friends can stay together in a relatively small area but can all be shopping at different stalls. The corridors of the Grand Bazaar are asymmetrical in their layout, which facilitates visitors to wander the market more instead of darting straight to one shop. As a result, the customer explores more of the market and is able to discover something new happening at the market each time they visit.

Chesterton's market will need to capture this same level of intimacy with its shops while still providing the flexibility that the Grand Bazaar has achieved. In addition, to the level of scale, the Grand Bazaar has its own small community with a Mosque, and school. The Chesterton Market will create this same atmosphere of community by adding meeting spaces for community organizations, visitor center, and outdoor amphitheatre.

Night Market, Siem Reap

The open-air markets of Southeast Asia are composed of temporary structures of stalls covered by canvas. In sharp comparison to the long established indoor markets of Europe, the Night Market in Siem Reap Cambodia is outside and is most alive after the sun has set.

The informal nature of the market is due to the

sudden increase of tourists to the country and because outdoor structures allow for increased

ventilation. Having the market outdoors provides natural ventilation, which is a serious concern in the heat of a tropical climate (Zumbach). The market has two different stall configurations.

The first type is located along wider avenues where shopkeepers set up stalls in front of their permanent stores (Figure #3). The other type of stall is a set of simple tables that are arranged along narrow pathways and side streets. These stalls are not part of an adjacent store and often specialize in only one type of good. The intimacy of the smaller stalls is similar to the

arrangement of stalls at the Grand Bazaar allowing customers to receive personal assistance from the shopkeeper. These smaller stalls also allow the shopkeeper to personally promote their stall either by demonstrating a skill in making a craft or announcing deals as potential customers pass by. This personal touch makes the experience of shopping an enjoyable event where you may find something new and unique compared to the chore that shopping often becomes. Interspersed amongst the market stalls are occasional restaurants and bars, which provide shoppers a place to relax and meet each other. The stall roofs are either covered by cloth or by a traditional thatch, which reflects light from the sun while also allowing air to circulate. The sides of the stalls are



Figure #3 The Night Market.
Siem Reap, Cambodia

left open to allow as much air to circulate and thus cooling the market. The Market's popularity has expanded into side streets providing local stores with additional business.

The Market in Chesterton can begin by incorporating these strategies by simply interspersing permanent stores with temporary stalls that open a few days a week. Chesterton's Downtown draws a large amount of tourists in the summer months and could follow the techniques of the Night Market to create another venue for tourists. The temporary stalls would allow portions of the market to configure for different events and allow for a variety of set up and configurations.

Pompidou Center, Paris

Lastly, the Pompidou Center in Paris, France is a sophisticated public building and piece of public infrastructure. The building is located in the heart of Paris and includes a large public library, modern art museum, and a center for music/acoustic research (Perez).

The Pompidou Center is a cultural hub to the

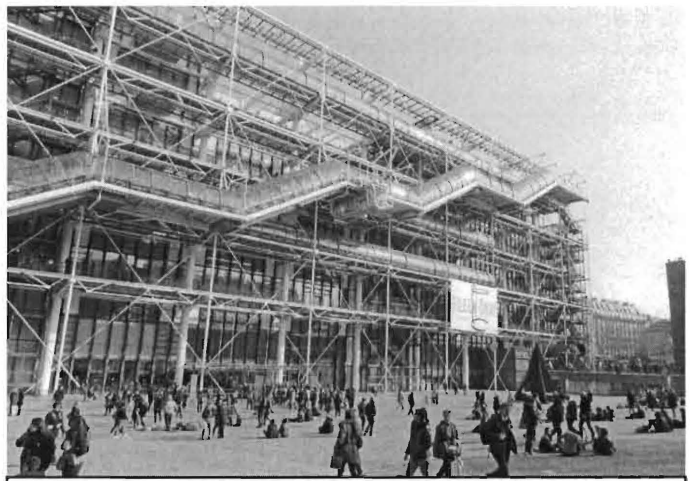


Figure #4 The Pompidou Center. Paris, France

city and integrates several programs (museum, library, music center) into one location. All of these programs provide an area of the city that is short on spare room with a variety of activities to do all in one building thus increasing visitors to the center. The Pompidou Center only used a portion of the site for the building footprint and left the rest as a sloped plaza for the public to use. The architects were able to give this plaza back to the city by increasing the height of the building.

The Chesterton market will also utilize vertical space to fit multiple programs into a dense urban context. The market and community center will include a visitor center, organization meeting spaces, and a restaurant on the two main floors. By adding, an additional floor there will be more space to create the open plaza where the market and community events will take place.

The sloped plaza at the Pompidou Center is constantly filled with visitors and street performers creating a hub of activity. The plaza gives residents and visitors some room

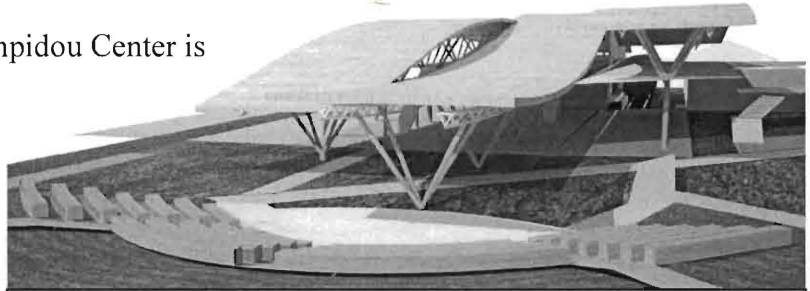
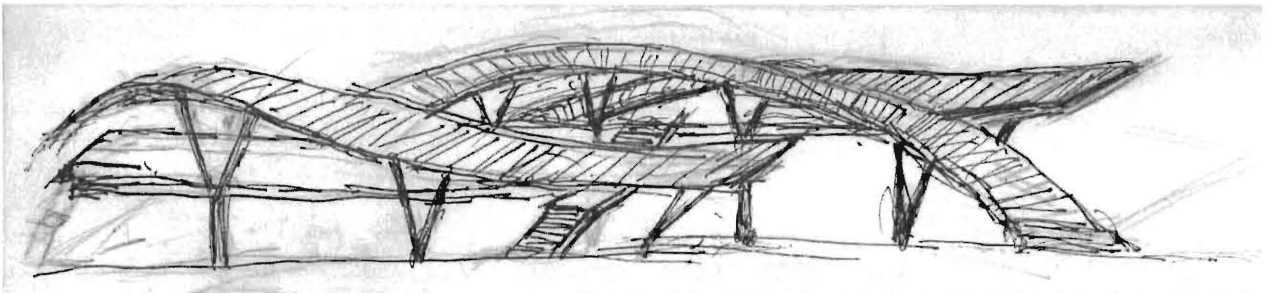


Figure #5 Proposed Amphitheatre Design for the Market

to stretch in the densely packed old city. In addition, the plaza is gently sloped providing a comfortable grade for people to sit down similar to an amphitheatre. The plaza functions just like an amphitheatre but instead of watching an entertainment venue, the plaza is situated so you can people watch making the city of Paris the entertainment. The Chesterton Market will include a gradually sloped hill that will begin in the park to the east of the market and face west with views directed at the activity of the market (Figure #5). As the hill, slopes to the base fixed seating will be added in a traditional amphitheatre layout. This permanent seating will hold an audience for a small venue and the sloped hill will provide seating on the ground for larger venues. The structure of the market can also be used to hold a large projection screen that the amphitheatre can use for public viewings of films during the warmer months.



The Chesterton Market

The name for this project (The Exchange) defines the facility's purpose to bring a town together so that they may exchange products, services, and ideas for the improvement of the community. With an ever growing and popular farmers market the need has a risen to provide a more permanent structure for the market along with additional space for promoting the community.

Figure #6 Early Conceptual Sketch for the Market

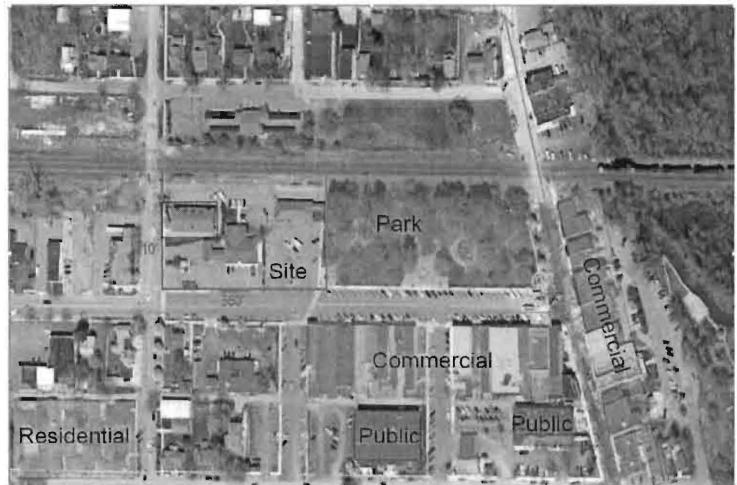


Figure #7 Master Plan and Surrounding Context

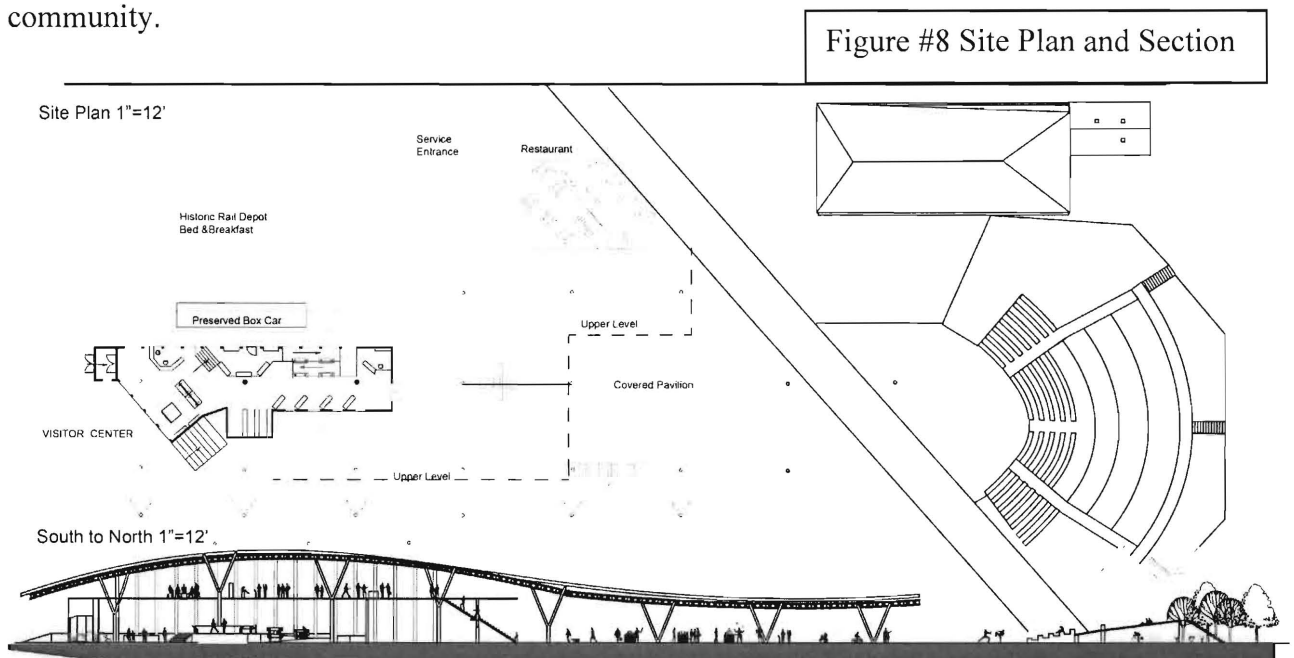


Figure #8 Site Plan and Section

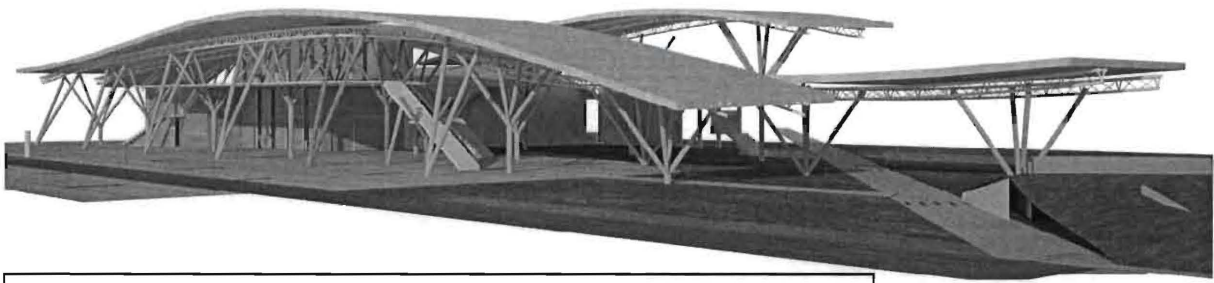


Figure #9 Market Structure Looking Northwest

The main market structure is protected under a canopy of metal plates with occasional skylights oriented north to increase natural daylight. The market is organized under a series of parallel roof canopies that rise and falls like the natural landscape of the nearby dunes and waves along the lakeshore. The building form was derived for this aesthetic value but also to improve natural ventilation and day lighting. While one roofline drops, a parallel roofline climbs creating access to natural ventilation and sunlight to the interior of the structure. Since the interior canopies do not have access to the edges of the structure, the vertical undulations create openings on the north and south side to provide access to the above-mentioned natural resources. The structure is composed of two stories allowing for added market/recreational space to be added. The first floor can be adapted into a covered sports court where basketball and other forms of recreation can take place while the market is not in operation.

Located on the west side of the pavilion will be a visitor center to provide information to the growing and economically crucial tourism industry. The visitor center's north face is composed of a series of high windows that provide views of a historic boxcar that already exists

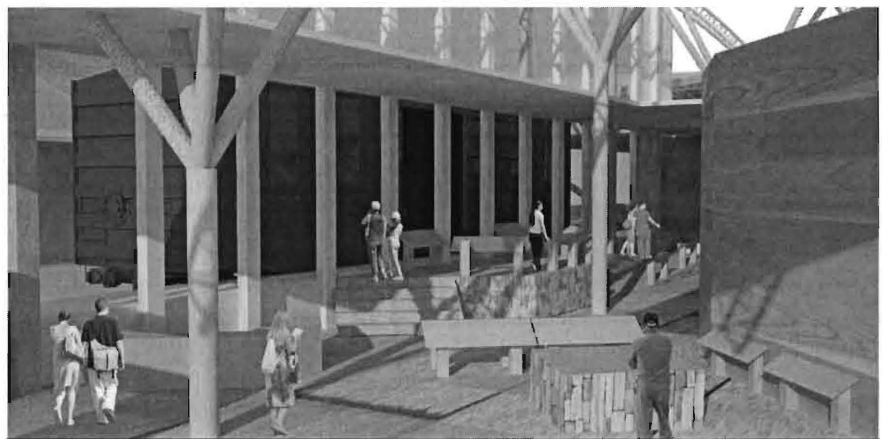


Figure # 10 Visitor Center Interior

on site. The boxcar was placed there by the adjacent Bed and Breakfast owner and celebrates the town's history of being founded after the completion of a railroad. There are two existing historic buildings on the site, which includes an old rail depot, and the former passenger station, the first of which is now a bed and breakfast. The second building to the east is the town's old passenger station and now serves as the

home for the chamber of commerce. The visitor center runs parallel to the market and releases visitors into the market facing eastward. Visitors can stop in the market or continue

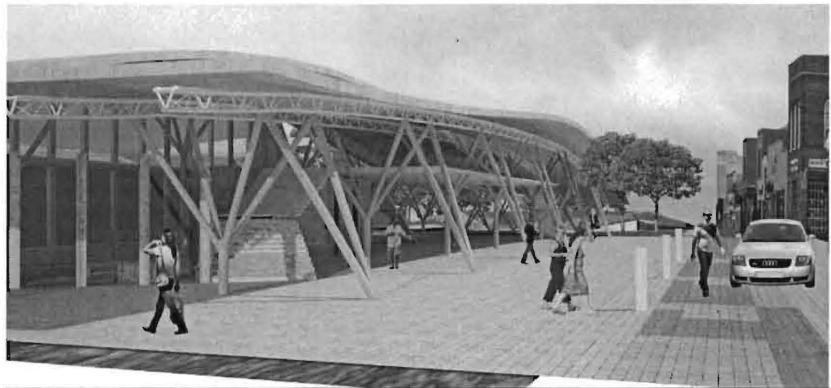


Figure #11 Market Plaza Looking Northeast

on to walk through the town's park or explore the historic downtown that lies in front of them.

By focusing visitors in this direction, they pass through all of these major attractions.

Community organizations will be able to use a series of meeting rooms that will be located above the visitor center. Over time, the areas surrounding the visitor center will be occupied by permanent businesses and the western half of the complex will become an indoor market. The pavilion already provides a roof and necessary structure so businesses can put up a building envelope and lease the space from the town. By providing, a place for small businesses to grow and prosper the town would be investing in its own economy.

The eastern edge will continue to focus on the farmer's market and recreational activities that will blend into the adjacent park. In between the park and the pavilion is an amphitheatre that faces the pavilion and can hang a screen from the pavilion's structure so that people can watch movies in the park. The amphitheatre offers a few rows of fixed seating with the rest

composed of a gradually sloping lawn where people can bring their own chairs or sit on the grass. This venue will allow local musicians, speakers, and movies to be shown to the public providing cultural experiences and community activities that will bring the town together.

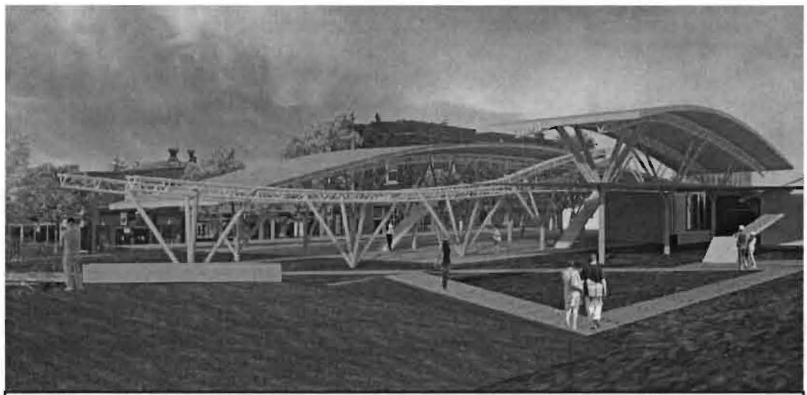


Figure #12 Market Structure View from adjacent Park

The Chesterton Market seeks to create a distinct identity for the town of Chesterton while simultaneously bringing the community together. The facility will focus on drawing the community together by creating an exchange of products, services, and ideas. In addition, the market will house areas for entertainment venues and community activities in either the amphitheatre or the market plaza. The Chesterton Market will facilitate the development of small businesses while simultaneously providing public amenities to the members of the community. The design principles drawn from the four case studies analyzed have contributed to making a distinct design that will in turn provide the Chesterton Market with the resources to facilitate a positive impact on the town of Chesterton.

Works Cited

Moore, Rowan. "Metropol Parasol, Seville by Jürgen Mayer Review." The Observer. Guardian News and Media, 27 Mar. 2011. Web. 12 Mar. 2014

Perez, Adelyn. "AD Classics: Centre Georges Pompidou / Renzo Piano + Richard Rogers." ArchDaily. Arch Daily, 11 June 2010. Web. 01 Mar. 2014.

Tuzel, Tansel. "THE COVERED BAZAAR - A MINIATURE TOWN." The Covered Bazaar. Turkish Cultural Foundation, 14 Aug. 2006. Web. 07 Mar. 2014.

Zumbach, Lauren. "Siem Reap's Night Market." CNN Travel. CNN, 26 Sept. 2011. Web. 19 Mar. 2014.

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